# Drainage Water Management (DWM) FAQ

#### 1. What is DWM?

DWM is the practice of using a water control structure to vary the depth of the drainage outlet, allowing water to be stored in the ground behind the outlet raising the water table for plant usage.

# 2. Why install DWM?

DWM has several benefits. The main purpose of DWM is to control the release of excess nutrients (nitrate specifically) into drainage ways. There is also a potential to improve yields, given proper management and weather conditions. Also, there is potential to benefit wildlife during non-growing seasons due to wet/flooded areas that can be created.

# 3. Is DWM the same as Sub-Irrigation?

No. DWM relies on natural rainfall to raise the water table and the water table may fluctuate based upon weather conditions. Sub-irrigation adds water to the drainage system and maintains the water table. Sub-irrigation requires lateral spacing much closer than is typically used for drainage systems.

# 4. Where can DWM be implemented?

DWM is most cost-efficient on fields that have a land slope of <1% due to the number of structures that would be required. As the slope increases, so will the cost of the system.

# 5. Can DWM be retrofit to an existing drainage system?

Yes. However, random tile systems may not see much benefit, depending on the layout and slope of the tile. It is most cost-effective when the system is a pattern drained system with laterals that have a slope of 0.2% or less.

# 6. What yield impact can be expected?

Results can vary greatly. If there is not a sufficient amount or timing of rainfall, DWM may have no impact. However, if conditions are right and the structures are managed properly, studies have shown an increase in yields of up to 5% or more.

# 7. Will earthworms be affected by DWM?

Possibly, more research needs to be conducted before a firm conclusion can be made. Some worms do not prefer excessive wetness, but researchers have not determined exactly what amount of wetness is "excessive".

#### 8. How much does DWM cost?

Costs include the water control structure, installation, and time managing the structure. Structure costs range from \$500-\$2000, depending on height, tile size, and manufacturer. Cost per acre will vary depending on the slope of the land and acres controlled.

# 9. How does DWM work with Soil Health & cover crops?

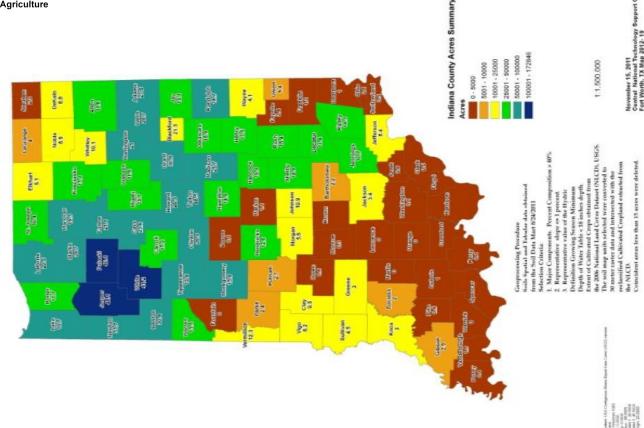
A small increase in organic matter is likely when DWM is implemented. If not properly managed, compaction can be an issue due to wetness during field operations. Studies are being conducted to determine the proper management of DWM used in conjunction with cover crops. The water table may not be able to be held as high during winter months and may need to be lowered earlier in the spring when cover crops are being utilized on fields with DWM installed.

### 10. What financial assistance is available?

Currently, DWM is part of EQIP. There are separate payments for the structures themselves as well as payments for managing the structures after they are installed. 554 Drainage Water Management practice code provides a payment of \$131 per structure for up to three years. Practice code 587, Structure for Water Control can be utilized to cover the cost of the structures themselves and their installation. The payment rate varies depending upon the size of the structure.



Indiana Cropland Suitable for Drainage Water Management



# **Pros and Cons of DWM:**

### Pros:

- Reduce Nitrates released to water bodies
- Potential for crop yield increase
- Potential to create wildlife habitat during non-growing season
- Pro-active approach to possible drainage regulations in the future

#### Cons:

- Additional Cost
- Requires additional management
- Requires certain landscape

# **Additional Resources:**

- "Questions and Answers About Drainage Water Management for the Midwest" Purdue Extension https:// www.extension.purdue.edu/extmedia/WQ/WQ-44.pdf
- National Engineering Handbook Part 624, Ch. 10, "Water Table Control"
- Your Area and CIT Engineers

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